An Empirical Approach . . .

THE FINANCIAL IMPLICATIONS OF READINESS

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Introduction

When considering changes in Army logistics, both costs and benefits should be assessed. The Army has a great deal of experience and expertise at estimating costs and assessing benefits in terms of performance, effectiveness, and readiness, but the financial impact of such benefits is much more difficult to assess. It is intuitive that a higher readiness level is better than a lower one, but is there an empirical approach to estimating dollar implications in small changes of readiness level? With respect to benefit, the recognized measure of effectiveness for logistics is unit operational readiness rates.

The Defense Acquisition University defines readiness as a state of preparation (measured against a set of criteria) of forces or systems to meet a mission; thus, it seems useful to translate readiness levels into a dollar value to compare with costs.

Cost Estimating

Personnel in the Scout/Attack Helicopters Product Management Office (PMO) (within the Program Executive Office (PEO), Aviation) recently faced a decision regarding how test equipment should be allocated within Army aviation units containing OH-58D Kiowa Warrior helicopters. To evaluate potential alternatives, associated cost and benefits had to be considered and compared, and then expressed as a standard unit of measure (i.e., in dollars). PMO personnel took an innovative approach to this problem.

After each aircraft in the Kiowa Warrior fleet was identified, the units in which they operate were "costed" using the Army Force and Organization Cost Estimating System (FORCES) model. FORCES, an accredited force-costing tool introduced in 1990, is maintained by the U.S. Army Cost and Economic Analysis Center. It provides an engineering estimate of the costs to acquire and maintain units listed in the current year HQDA Structure and Manpower Authorization System (SAMAS) database. SAMAS serves as the force development database that records the authorized level of manpower and force structure for the Army. As part of the Total Army Analysis (TAA) process, it is indicative of what Congress, the Pentagon, and Army leadership have collectively set as the proper mix of combined arms units. That is, over multiple cycles, decisionmakers have reached consensus that the TAA represents optimum mix of units available given the budget available.

Cost Data

Life-cycle costs, normally measured in dollars, were gathered from PMO estimates, Army military-civilian cost system personnel costs, U.S. Army Aviation and Missile Command support contracts, Army cost databases, etc., for each alternative under consideration. These costs were then presented to decisionmakers for use in constant, current, and discounted dollars. Because FORCES estimates the annual cost of all units within the Army, it will implicitly indicate how much our leadership is willing to spend to maintain the status quo. If this were not true, there would be an adjustment made shifting funds to another, more effective mix of weapon systems.

If we assume that Army aviation units maintain a readiness level of 90 percent, each percentage point of degradation would indicate a movement away from "goodness," and fewer aviation assets would be available for immediate use. While it is naive to assume a linear cost relationship between zero and 100 percent, over small variations in readiness (for instance, 90 percent up to 92 percent; or 90 percent down to 88 percent), it seems reasonable to use a linear cost/readiness relationship to get a sense of the cost impact of small changes in readiness level. The reader should understand that this linear relationship is simply an approximation, and further study regarding the shape of the cost/readiness curve is warranted prior to any budgetary decisions. Given this assumption, each percentage point of readiness with respect to the Kiowa Warrior fleet would represent approximately a $7 million investment in readiness.

Conclusion

By using the FORCES tool, analysts equated each alternative's life-cycle cost to an equivalent indicated change in readiness. This allowed the decisionmaker to evaluate alternatives. Assessment using the judgments of subject matter experts revealed the best alternative, thus saving the PMO from a time-consuming and costly effectiveness study.

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